

I Claim:

1. An elongated centering stud adapted for attachment to a wheel mounting member applicable for securing a vehicle wheel to a spin balancer, said centering stud comprising:
  - (a) a head adapted for engaging the vehicle wheel;
  - (b) a body extending from said head;
  - (c) a base formed with said body opposite said head, and adapted for engaging the mounting member;
  - (d) a reduced-diameter connecting end projecting from said base and adapted for being inserted into a stud-receiving hole formed with the mounting member; and
  - (e) means for flexing said centering stud relative to the mounting member, such that any force acting on said centering stud is distributed along a length of said stud.
2. A centering stud according to claim 1, wherein said base and body define a longitudinally-extending internal cavity.
3. A centering stud according to claim 2, wherein said internal cavity extends more than 5% of the entire length of the centering stud.

4. A centering stud according to claim 2, and comprising an elongated reinforcement pin received within said internal cavity, and having a free end projecting from said base and defining said connecting end of said centering stud.

5. A centering stud according to claim 4, wherein said internal cavity defines an enlarged-diameter flex region extending inwardly from said base, and adapted to allow movement of said base relative to said reinforcement pin and flexing of said centering stud relative to the mounting member.

6. A centering stud according to claim 5, wherein said flex region extends more than 5% of the entire length of said cavity.

7. A centering stud according to claim 1, wherein the diameter of said base is more than 3.5 times the diameter of said connecting end, whereby the enlarged-diameter base protects the stud-receiving opening of the mounting member against deformation caused by operation of the spin balancer.

8. A centering stud according to claim 1, wherein the diameter of said base is more than 12.5% larger than a maximum diameter of said head.
9. A centering stud according to claim 1, wherein said head comprises a beveled locating tip for locating said centering stud in a lug hole of the vehicle wheel.
10. A centering stud according to claim 1, wherein said connecting end defines an annular groove adapted for receiving an O-ring to frictionally engage the mounting member at the stud-receiving opening.
11. A centering stud according to claim 1, wherein said head, body and base are integrally-formed together of a polymer material.
12. An elongated centering stud adapted for attachment to a wheel mounting member applicable for securing a vehicle wheel to a spin balancer, said centering stud comprising:
  - (a) a head adapted for engaging the vehicle wheel;

- (b) a body extending from said head;
- (c) a base formed with said body opposite said head, and adapted for engaging the mounting member;
- (d) said base and body defining a longitudinally-extending internal cavity; and
- (e) an elongated reinforcement pin received within said internal cavity, and comprising a free end projecting from said base and adapted for being inserted into a stud-receiving hole formed with the mounting member.

13. A centering stud according to claim 12, wherein said internal cavity extends more than 5% of the entire length of the centering stud.

14. A centering stud according to claim 12, wherein said internal cavity defines an enlarged-diameter flex region extending inwardly from said base, and adapted to allow movement of said base relative to said reinforcement pin and flexing of said centering stud relative to the mounting member.

15. A centering stud according to claim 14, wherein said flex region extends more than 5% of the entire length of said cavity.

16. A centering stud according to claim 12, wherein the diameter of said base is more than 3.5 times the diameter of said connecting end, whereby the enlarged-diameter base protects the stud-receiving opening of the mounting member against deformation caused by operation of the spin balancer.
17. A centering stud according to claim 12, wherein the diameter of said base is more than 12.5% larger than a maximum diameter of said head.
18. A centering stud according to claim 12, wherein said head comprises a beveled locating tip for locating said centering stud in a lug hole of the vehicle wheel.
19. A centering stud according to claim 12, wherein the free end of said reinforcement pin defines an annular groove adapted for receiving an O-ring to frictionally engage the mounting member at the stud-receiving opening.
20. An elongated centering stud adapted for attachment to a wheel mounting member applicable for securing a vehicle wheel to a spin balancer, said centering stud comprising:

- (a) a head adapted for engaging the vehicle wheel;
- (b) a body extending from said head;
- (c) a base formed with said body opposite said head, and adapted for engaging the mounting member; and
- (d) a reduced-diameter connecting end projecting from said base and adapted for being inserted into a stud-receiving hole formed with the mounting member, and the diameter of said connecting end being less than one-third the diameter of said base, whereby the enlarged-diameter base protects the stud-receiving opening of the mounting member against deformation caused by operation of the spin balancer.